

**337733(37)**

**B. E. (Seventh Semester) Examination,  
April-May 2018**

**(New Scheme)**

**(Mech. Engg. Branch)**

**COMPUTER AIDED DESIGN & MANUFACTURING**

*Time Allowed : Three hours*

*Maximum Marks : 80*

*Minimum Pass Marks : 28*

*Note : Attempt all questions. Part (a) from each question is compulsory. Attempt any two parts from parts (b), (c) and (d) of each question.*

- 1. (a) Write any four CAD software packages. 2
- (b) Discuss the points to be considered for the choice and implementation of CAD. 7

**337733(37)**

**PTO**

**[ 2 ]**

- (c) What is product design? Explain its importance. 7
- (d) Explain world Co-ordinates, Normalized device Co-ordinates and Homogenous Co-ordinates system. 7

- 2. (a) Write parametric equation of line and circle. 2

- (b) The co-ordinates of four control points relative to a current WCS are given by

$$P_0 = [2 \ 2 \ 0]^T, P_1 = [2 \ 3 \ 0]^T, P_2 = [3 \ 3 \ 0]^T \text{ and } P_3 = [3 \ 2 \ 0]^T.$$

Find the equation of the resulting Bezier curve. Also find points on the curve for

$$u = 0, \frac{1}{4}, \frac{1}{2}, \frac{3}{4} \text{ and } 1. \quad 7$$

- (c) Given point  $P = (2, 4, 8)$  and using the homogeneous representation

- (i) Calculate the orthographic projection  $P_o$  of  $P$
- (ii) Calculate the perspective projection  $P_p$  of  $P$  if the centre of projection is at a distance  $d = 10$  mm from the origin along the  $Z_o$  axis.

- (d) Derive the equation of Hermite Cubic Spline curve. 7

**337733(37)**

- 3. (a) Give the name of four surface entity. 2
- (b) With neat sketches, explain the various boolean operations used in CSG solid modeling. 7
- (c) Explain the use of Euler's equation in solid modeling. 2
- (d) What do you understand by parametric and non-parametric representation of surfaces? 7
- 4. (a) Compare open loop and closed loop NC systems. 2
- (b) Classify the NC machines on the basis of
  - (i) Types of control
  - (ii) Programming method 7
- (c) What are the different ways of defining the point, line and circle using geometry statements of APT Language. 7
- (d) What are subprogram? Explain canned cycle in manual part programming and macro statement in APT language. 7
- 5. (a) What is hybrid CAPP system? 2
- (b) Describe the various layouts used in FMS. 7

- (c) Explain the different types of part classification systems. 7
- (b) Explain the various types of machine cell designs. 7

http://www.csvtuonline.com  
 Whatsapp @ 9300930012  
 Your old paper & get 10/-  
 पुराने पेपर्स भेजे और 10 रुपये पायें,  
 Paytm or Google Pay से